

REVISION OF THE AUSTRALIAN PSYCHIDÆ.

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The members of this family are extraordinary insects, and comprise the most curious and remarkable of all Australian Lepidoptera; their larval habitations exemplify insect architecture in its most remarkable forms.

Some of the smaller *Tineina*, such as *Xysmatodoma* and *Talæporia*, exhibit similar larval peculiarities, but their cases (cocoon) never assume the proportions or ornamentation of the *Psychidæ*, although one species, *i.e.*, *Talæporia magnella*, Walk., deserves more than passing notice on account of its peculiar cylindrical case, which is built in the form of tiers.

The ♀ of the *Psychidæ* are usually thick, rather short, fleshy, grub-like creatures, devoid of wings, legs, or any properly developed antennæ. According to McCoy (Prod. Zool., Vic., iv. [1879]), "the ♀ never leaves the case (cocoon), but after copulation brings forth an abundance of eggs, and the newly-hatched larvæ lower themselves by a fine strong silken thread, and immediately commence to each form a portable habitation for themselves, consisting of small pieces of leaves, bark, etc. These larval cases are open at the ends, and the larvæ protrude themselves just sufficiently out of the anterior portion of the case to use their legs for locomotion, generally fixing part of the edge of the aperture by fibres of silk, temporarily, to the twig it is on, so that when alarmed it withdraws completely within the larval case, which remains suspended and quite closed."

The cases are common and rather conspicuous objects in our scrubs, but the perfect insects are seldom met with, as the larvæ are subject to attacks of various species of parasitic *Diptera* and *Ichneumonidæ*.

The family is of cosmopolitan distribution, but more numerous in warm climates. The ♂ imago has thinly-scaled wings, without markings; flight strong and swift. The ♀ is almost wholly helpless; the abdomen is at first greatly distended with eggs, but ultimately shrivels up.

PSYCHIDÆ.

Head, densely rough-haired. Ocelli large. Tongue obsolete. Antennæ $\frac{1}{2}$, in ♂ strongly bipectinated to apex, sometimes apical portion simple. Labial palpi very short.

Thorax densely hairy above and beneath. Abdomen, femora, and tibiæ densely hairy, posterior tibiæ without middle spurs, end spurs very short. Forewings: 1a anastomosing with 1b before middle, 1c (when present) coincident with 1b beyond middle. Hindwings: 8 with one or more costal pseudoneuria (rarely without), 5 and 6 sometimes absent. ♀ apterous, without legs or developed antennæ.

Genera of Psychidæ.

In all the Australian genera the anterior tibiæ have a long strong spine rising from near base beneath in forewings. 1a coincides with 1b before middle.

TABULATION.

1.	Antennæ bipectinated to apex	2
	,, with apical portion simple	<i>Oiketicus</i>
2.	Basal joint of anterior tarsi much elongated ---	<i>Plutorectis</i>
	,, ,, ,, normal	3
3.	Terminal joint of anterior tarsi much elongated ...	<i>Clania</i>
	,, ,, ,, normal	4
4.	Forewings with vein 9 absent	<i>Elinostola</i>
	,, ,, ,, present	5
5.	Hindwings with vein 5 absent	<i>Hyalarcta</i>
	,, ,, ,, present	<i>Paracharactis</i>

1. ELINOSTOLA, n. g.

Antennæ bipectinated to apex (?) Abdomen moderate. Forewings with 1c coincident with 1b beyond middle, 4 and 5 stalked, 7 and 8 stalked, 9 absent. Hindwings with vein 5 absent, 6 absent, 8 without pseudoneuria.

Type.—*Hypomela*.

Recognized amongst other characters by the absence of vein 9 of forewings.

1. E. HYPOMELA, n. sp.

♂, 15 mm. Head, thorax, legs, and abdomen blackish (antennæ imperfect). Forewings rather elongate, moderately dilated posteriorly; costa somewhat rounded, termen oblique; very pale fuscous, semi-hyaline; cilia fuscous. Hindwings rather small, termen oblique, apex slightly prominent, dark fuscous, becoming paler on basal half; cilia as in forewings.

Case, unknown.

Brisbane, Queensland. One specimen: in September.

2. HYALARCTA, n. g.

Antennæ bipectinated to apex. Abdomen moderate. Forewings with 1c coincident with 1b beyond middle, 5 absent, 6 from above middle of transverse vein, 7 sometimes out of 8, 8 and 9 stalked, 10 and 11 sometimes stalked. Hindwings

with vein 5 absent, 6 and 7 approximated or coincident, 8 coincident with cell beyond middle.

Type, *nigrescens*, Dbld.

Differs from the other Australian genera by the absence of vein 5 of forewings.

1. Antennæ blackish	2	<i>nigrescens</i>
2. ,, dark orange	3	<i>Huebneri</i>
3. Antennal pectinations 10	4	<i>ptiloclada</i>
4. ,, ,, 6	1	

2. H. NIGRESCENS, Dbld.

Thyridopteryx nigrescens, Dbld., Eyre Exped. Aus. i., p. 437, t. 5, fig. i., 1845. *Oiketicus Herrichii*, Westw., P.Z.S., p. 232, t. 37, fig. 3, 1854; Macal. Proc. N.H. Soc., Dublin v., p. 132, fig. i., 1867.

♂, 26 mm. Head, thorax, and abdomen black; face and palpi white; thorax sometimes with a posterior dull ochreous spot. Antennæ dark fuscous, pectinations fuscous, at greatest length 6. Legs ochreous-reddish, hairs of tibiæ black. Forewings elongate-triangular, costa straight, apex rounded, termen rounded oblique; hyaline-iridescent, veins outlined with ochreous-reddish; a broad ochreous-reddish costal streak, from base of costa to end of cell, caused by thickening of veins; base of wing blackish, especially along dorsum; cilia ochreous-fuscous. Hindwings rather small, apex rounded, tolerably prominent, termen rounded, continuous with apex; colour, veins, and cilia as in forewings: dorsal third of wing thickly irrorated with minute scales, forming a patch throughout.

Case.—30-38 mm. in length, 30 mm. in circumference at greatest breadth; greyish-ochreous, minutely spotted with blackish; cylindrical, moderately smooth, not ornamented with leaves or twigs, tapering at both ends, lower end more elongate and narrow. Surface marked with seven longitudinal ridges, by their projections forming concavities between the ridges, which gives a transverse section the appearance of a heptagon with concave sides. The case is fixed by its upper end to the food-plant by a strong, short, thick appendage, which is sometimes looped around the twig to which it is attached.

The case is not unlike a large dried seed capsule in general appearance.

Larva.—The larvæ are fuscous, mixed with blackish, the head and anterior segments becoming pale fuscous, and the second thoracic segment is irrorated with fuscous. Feeds on *Eucalyptus*, sp.

This is not a common species.

Sydney, New South Wales; Adelaide, South Australia; and Gisborne, Victoria. Five specimens; in February and March.

3. H. HUEBNERI, Westw.

Oiketicus Huebnerii, Westw., P.Z.S., p. 228, t. 36, fig. i., 1854; Macal. Proc. N.H. Soc., Dublin, p. 133. *O. Careyi*, *ib.*, *l.c.*, p. 133.

♂, 28 mm. Head, face, thorax, and abdomen blackish-fuscous, antennæ dark-orange, pectinations dark-orange, at greatest length 6. Legs dark-fuscous. Forewings elongate-triangular, costa straight, apex rounded, termen obliquely rounded; hyaline-opalescent; veins outlined with pale ochreous, costa broadly pale yellow, from base to near $\frac{3}{4}$, caused by confluence of veins; cilia ochreous. Hindwings rather small, termen rounded; colour, veins, and cilia as in forewings; costa with a broad black line from base to middle, hairs of dorsum black, moderately thick.

Case.—40-45 mm. in length; diameter, 13 to 15 mm.; circumference, 30 mm.; extreme circumference, 54 mm.; ovate-lanceolate, broadly tapering at both ends; dull grey-whitish or greyish-fuscous, thickly ornamented except posterior $\frac{1}{6}$ with (A) innumerable, irregularly arranged fine long twigs of *Pinus insignis*, which hang down loosely and vary in length from 10 to 40 mm. (B.) ornamented with similar twigs and pieces of leaves or phyllodia of *Eucalyptus*. (C) ornamented throughout with moderately large pieces of leaves or phyllodia of *Eucalyptus* and *Leptospermum*, placed indiscriminately. The opening of the lower extremity of the cocoon is broadly ovate. The case is fixed to the food-plant by a thick piece of strong, silken material which is generally looped to the stem, but is sometimes without the loop. The cases are very different in their outward appearance on account of the different food-plants.

Larva.—The larvæ are similar to the previous species, but somewhat lighter-coloured, and marked with reddish on anal segments.

This species is easily separated from *nigrescens*, Dbld., by its orange antennæ.

Adelaide, South Australia; Melbourne, etc., Victoria; Sydney, etc., New South Wales; and Brisbane, Queensland. Several specimens; from December to April.

4. H. PTILOCLADA, n. sp.

♂, 28 mm. Head grey-whitish. Thorax and abdomen black, thorax anteriorly with a patch of whitish hairs. Abdomen rather elongate. Antennæ fuscous, pectinations fuscous, at greatest length 10 (imperfect). Legs blackish. Forewings very elongate, costa slightly arched, apex rounded, termen strongly oblique, gently rounded; hyaline, slightly iridescent; veins outlined with pale ochreous; a broad pale ochreous costal streak caused by confluence of veins, from base to $\frac{3}{4}$; basal

fourth of wing thickly irrorated with fuscous scales; cilia fuscous. Hindwings rather small; colour, cilia, and veins as in forewings, basal portion of wing as in forewing, but the colour is continued further along dorsum.

Case and Larva.—Unknown.

Differs from the other species by the more elongate forewings and longer pectinations of antennæ.

Nar-nar-noon, Victoria. Type in *Coll.*, *Lyell*.

3. CLANIA, Walk.

Antennæ bipectinated to apex. Terminal joint of anterior tarsi elongate. Abdomen moderate. Forewings with several dorsal pseudoneuria, 1c coincides with 1b beyond middle, 4 and 5 stalked, 7 connate with 8, 8 and 9 stalked. Hindwings with 4 and 5 stalked, 8 connected or anastomosing with 7, with several costal pseudoneuria. Recognized by the anastomosis of veins 8 and 7 of hindwings. The cases of the species vary little in appearance.

1. Face white, antennæ ochreous-fuscous	5	<i>Dewitzi</i>
2. " " " dark fuscous ...	6	<i>ignobilis</i>
3. Thorax with longitudinal white stripes	7	<i>tenuis</i>
4. " without " "	6	
5. Forewings light fuscous, semi-transparent	8	<i>Lewinii</i>
6. " blackish fuscous, opaque ...	5	
7. " hyaline, devoid of markings ...	9	<i>hemitricha</i>
8. " " with black scales on margins	10	<i>photidias</i>

5. C. DEWITZI, Heyl.

Oiketicus Dewitzi, Heyl., Ann. Soc. Ent. Belg., xxix., p. cxix., 1886.

♂, 32 mm. Head, thorax, and abdomen fuscous, face whitish, thorax mixed with rufous and dull whitish. Antennæ ochreous-fuscous, pectinations reddish-ochreous, at greatest length 6. Legs fuscous, anterior pair mixed with reddish-ochreous, and with a whitish tuft of hair on anterior portion of tibiæ. Forewings elongate, moderately broad, costa gently arched beyond middle, termen unevenly rounded, oblique; dark fuscous, inclining to black on basal third; veins outlined with fuscous; semi-transparent; cilia dark fuscous. Hindwings with apex rounded, termen rounded continuous with apex; colour and cilia as in forewings, hairs of dorsum dark fuscous.

Differs from the other species by its blackish colouring and ochreous antennæ.

Case and Larva.—Unknown.

Launceston, Tasmania. One specimen; in October. The type came from Sydney, New South Wales.

6. *C. IGNOBILIS*, Walk.

Entometa ignobilis, Walk., Char. Lep. Het., p. 67, n. 7, 1869; McCoy, Proc. Zool. Vict., iv., t. 40, ff. 7-10, 1879.

♂, 36-40 mm. Head and thorax ochreous-reddish, face white or whitish, thorax anteriorly paler. Antennæ and abdomen dull ochreous-reddish, somewhat fuscous tinged, a dull whitish tuft of hair at base of antennæ. Antennal pectinations at greatest length, 8. Legs pale ochreous-fuscous. Forewings elongate, costa almost straight, arched towards apex, apex hardly rounded, termen oblique; fuscous, becoming darker around edges and towards base, cell semi-transparent; veins outlined with ochreous fuscous; cilia fuscous. Hindwings with apex somewhat prominent, termen oblique. Slightly sinuate, on posterior half; colour, outlining of veins, and cilia as in forewings.

Case.—35-50 mm. in length; diameter, 10-15 mm.; circumference, 30-45 mm. Cylindrical, tapering broadly at both ends; dull fuscous, thickly ornamented with a solid fence of stout pieces of stems of food-plant, placed longitudinally and placed thickly together. These pieces of stems vary in length from 20 to 90 mm. Of the latter lengths there are but 2 or 3 to each case, and are usually much thicker than the others, appearing to act as supports.

Larvæ.—The larva is a somewhat fusiform, short, almost naked, fuscous-coloured creature. Head and thorax creamy white, thickly strigulated with dark fuscous, posterior segments with a few scattered hairs.

This is the commonest and most widely distributed species of the group. The larvæ feed on various species of *Eucalyptus*. (We have bred the ♂ from *E. rostrata* in South Australia.) But the perfect insects are rarely taken on the wing, being unmercifully attacked by various species of parasitic *Diptera* and *Ichneumonidæ*, in the larval stage. It has stood for many years in collections as *Entometa ignobilis*, but the genus *Entometa* is one of the *Lasiocampidæ*, of which *obliqua*, Walk., is the type, according to Kirby.

The type of *ignobilis* is in the National Museum, Melbourne.

Sydney, New South Wales: Melbourne, Gisborne, etc., Victoria; Perth, Western Australia; and Adelaide, etc., South Australia. Several specimens; in January and February.

7. *C. TENUIS*, Rosen.

Ann. Nat. Hist., 5, xvi., p. 422, t. 11, fig. 3. 1885.

♂, 22 mm. Head, thorax, antennæ, abdomen, and legs black, face snow-white, patagia white, thorax with two raised

woolly-white longitudinal stripes of hair almost meeting at posterior portion, and more or less continued to anterior portion of abdomen, antennal pectinations at greatest length 6. Forewings elongate, moderate, costa nearly straight, apex rounded, termen gently bowed, oblique; light fuscous, minutely irrorated with blackish, more especially around margins; cell with an almost transparent elongate cordate patch at posterior extremity; veins outlined with blackish; cilia short, blackish. Hindwings with apex rounded, termen rounded, continuous with apex; colour, veins, and cilia as in forewings; hairs of dorsum blackish.

Case.—25-28 mm. in length; dull greyish-fuscous, main projecting twin 35 mm. long, case 7 mm. in diameter, 27 mm. in circumference, ornamented by about four main pieces of twigs of *Eucalyptus*, sp., which are the full length of cocoon, and about 12 to 16 smaller, shorter, and somewhat similar pieces, some of which are equally as long as the four, but thinner; the main projecting stem is generally much thicker than the rest, and extends about 10 mm. beyond the extremity of the lower aperture of case. Outer portion of twigs more or less covered with innumerable silky grey-whitish hairs, rather short.

Launceston, Tasmania. A fine series bred by Mr. F. M. Littler; in January. Also from Sydney, New South Wales; Blackwood and Port Lincoln, South Australia; Gisborne and Stawell, Victoria.

8. C. LEWINII, Westw.

Oiketiscus Lewinii, Westw., P.Z.S., Lond., 1854, p. 231, t. 37, fig. 1; Macal., Proc. Nat. Hist. Soc., Dublin, v., p. 131, 1867.

♂, 24 mm. Head, thorax, antennæ, abdomen, and legs brownish, face whitish, patagia whitish, thorax with two dull white longitudinal stripes of woolly hair more or less meeting posteriorly. Antennal pectinations light fuscous, pectinations at greatest length 6. Forewings elongate, moderate, costa nearly straight, apex rounded, termen gently bowed, oblique; very light fuscous, minutely irrorated with darker fuscous, especially around margins; cell with an almost transparent elongate-cordate mark at posterior extremity; veins outlined in dull fuscous; cilia fuscous, rather short. Hindwings with apex rounded, termen rounded continuous with apex; colour, veins, and cilia as in forewings, hairs of dorsum light fuscous.

Case.—Unknown.

This species appears to differ from the preceding, to which it is closely allied, by its larger size and more brownish colouring; *tenuis* approaches it very closely in general appearance, but the colouring in the 16 specimens before me of that species

is black or blackish, whereas in the present it is brown or pale brown.

Gippsland, Victoria; Sydney (Katoomba), New South Wales; Blackwood, South Australia. Five specimens; December to February.

9. *C. HEMITRICA*, n. sp.

♂, 25 mm. Head and thorax fuscous, face whitish, thorax with whitish longitudinal lateral stripes. Antennæ fuscous, pectinations at greatest length 8. Abdomen fuscous. Legs fuscous, anterior coxæ very hairy. Forewings elongate, moderate; costa hardly arched, termen gently bowed oblique; hyaline, semi-transparent; faintly iridescent; basal half of wing irregularly and minutely irrorated with light fuscous; costal area narrowly fuscous; veins outlined with light fuscous; cilia fuscous, short. Hindwings with termen rounded, faintly sinuate in middle; an irregular patch of fuscous scales towards base, dorsal hairs fuscous; veins and cilia as in forewings.

Case.—Unknown.

Differs from the other described species by the longer antennal pectinations and clearer wings.

Townsville, Queensland. One specimen bred in October (*Dodd*). I also possess two damaged specimens from Cooktown. Sent by Mr. Olive.

10. *C. PHOTIDIAS*, n. sp. ♀

♂, 40 mm. Head, thorax, and abdomen ochreous-fuscous, face mixed with whitish. Antennæ fuscous, pectinations dark-fuscous, at greatest length 12. Legs ochreous-fuscous. Forewings elongate, moderately dilated. Costa nearly straight, apex rounded, termen oblique; semi-transparent, somewhat iridescent, with some minute sparse scales around margins, thickest near base of costa; veins outlined with light fuscous; cilia fuscous (imperfect). Hindwings with apex rounded, continuous with termen; colour, veins, and cilia as in forewings; hairs of dorsum ochreous, mixed with fuscous.

Case.—Unknown.

At once recognized by the clear wings and long pectinations of antennæ.

Cairns, Queensland. One specimen taken by the late G. Barnard at Barron Falls.

4. *OIKETICUS*, Guild.

Antennæ bipectinated, towards apex simple. Basal joint of anterior tarsi very elongate. Abdomen extremely elongate. Forewings sometimes with several dorsal pseudoneuria,

1c coincides with 1b beyond middle, 4 and 5 stalked, 7 and 8 out of 9. Hindwings with 4 and 5 stalked, with a coastal pseudoneurium before middle.

Thorax, orange	...	...	...	...	11. <i>elongatus</i>
,, fuscous	...	...	...	...	12. <i>tertius</i>

11. O. ELONGATUS, Saund.

Trans. Ent. Soc. Lond. v., p. 43 (1847). *Metura elongata*, McCoy, Prod. Zool. Vict. iv., p. 43, t. 40, ff. 1-6 (1879). *O. Saundersii*, Westw., P.Z.S., Lond., p. 223, t. 35 (1854).

♂, 42-48 mm. Head and thorax orange-yellow, thorax posteriorly blackish. Antennæ black, pectinations black, at greatest length 8, very short on anterior half. Abdomen very elongate, orange, with broad, black posterior segmental bands, two anterior segments wholly black. Legs blackish, anterior tibiæ dull orange, banded with blackish above. Forewings very elongate, rather narrow, slightly dilated posteriorly, costa slightly arched beyond middle, apex strongly rounded, termen rounded, continuous with apex, slightly sinuate before anal angle; dark fuscous, becoming blackish along basal and costal areas; veins outlined with dull ochreous-white, semi-transparent on some portions; cilia fuscous. Hindwings with costa strongly arched, apex prominent, termen rather strongly sinuate at anal angle; colour, markings, and cilia as in forewings; dorsal hairs rather long, blackish.

Case.—80-120 mm. in length, extreme diameter 40-60 mm. Cylindrical tapering at both ends; greyish-white mixed with fuscous, lower portion more or less covered with small pieces of broken phyllodia, etc., and indiscriminately ornamented on upper half with stout twigs of *Eucalyptus*, varying from 20 to 30 mm. in length in irregularly-arranged series; those on lower half are generally much longer, and vary from 30 to 70 mm., usually from 3 to 6 of latter length. Case usually fixed to food-plant by a piece of strong silken appendage from 10 to 15 mm. long, and about 5 mm. in diameter. Easily recognized by the rather narrow, elongate forewings and orange and black abdomen.

Melbourne, etc., Victoria; Sydney, etc., New South Wales. Four specimens in December. We have not yet met with specimens from South Australia, although the species is said to be taken there.

12. O. TERTIUS, Temp.

T.E.S., Lond., v., p. 39, t. 5, ff. 1-5 (1847); *O. Templetonii*, Westw., P.Z.S., Lond., p. 234, t. 36, fig. 2 (1854). *Eumeta T.* Walk. Cat. Lep. Het. iv., p. 965 (1855). *Dappula T.*, Moore, Lep. Ceylon ii., p. 103 (1883). *Oiketiscus ulias*, Low, Proc. Linn. Soc., N.S.W., p. 83 (1899).

♂, 40 mm. Head, thorax, antennæ, and abdomen dark fuscous, face ochreous-fuscous, antennal pectinations at greatest length 8. Legs, dark fuscous; tarsi, with dull whitish rings. Forewings rather elongate. Costa slightly arched on apical half, termen very oblique, slightly bowed; dark fuscous; an elongate, somewhat ovate, very dark fuscous spot, occupying posterior half of cell, edged posteriorly, and sometimes laterally, with a narrow strip of dull whitish, which tends to be continued along veins posteriorly; lower portion of base of wing somewhat darker than rest of ground colour; cilia very short; fuscous. Hindwings, with apex prominent, hardly acute, termen sinuate in middle; dark fuscous; cell more or less outlined with dull whitish; dorsal hairs dull ochreous-fuscous; cilia as in forewings.

Case and Larva.—Unknown.

At once recognized by its uniform colouring and elongate-ovate spot in cell.

Cooktown, Queensland. Several specimens received from Messrs. E. A. Olive and F. P. Dodd in August and November; also from India and Ceylon.

5. PLUTORECTIS, n. g.

Antennæ bipectinated to apex. Basal joint of anterior tarsi much elongated. Abdomen moderately elongate. Forewings with one or more dorsal pseudoneuria; 1c coincides with 1b beyond middle; 4 and 5 connate or stalked, 7 sometimes out of 8, 8 and 9 stalked. Hindwings, with 4 and 5 sometimes stalked or coincident; 6 and 7 remote, 8 with one or more costal pseudoneuria, sometimes twice connected with 7.

Type.—*Boisduvalii*, Westw.

This is the predominant genus in Australia, to which additions may be expected. The species have a general resemblance to the following genus, but are separable by the position of veins 4 and 5 of hindwings.

1. Thorax orange, antennæ orange	...13	<i>melanodes</i>
2. " " " black	...14	<i>xanthochrysa</i>
3. Basal half of forewings black	...16	<i>zophopepla</i>
4. " " " not black	...18	
5. Forewings fuscous, thorax orange-fuscous	...15	<i>Boisduvalii</i>
6. " " " fuscous	...19	<i>gymnophasa</i>
7. Forewings pale ochreous-grey	...20	<i>lurida</i>
8. " " nearly black	...13	
9. Forewings hyaline, base black	...17	<i>hyaloscopa</i>
10. " " uniform grey-whitish	...18	<i>grisea</i>

13. P. MELANODES, n. sp.

♂, 32 mm. Head, thorax, antennæ, and abdomen bright orange-ochreous, both above and beneath, antennal pectina-

tions at greatest length 6. Legs orange-ochreous, tarsi slightly infuscated. Forewings, elongate moderate; costa nearly straight, arched towards apex, termen oblique, not rounded; dull transparent-whitish, minutely irrorated with black, which coalesces on basal half of wing so as to appear black; veins outlined with dull fuscous; cilia ochreous. Hindwings with costa rather strongly arched, apex somewhat prominent, termen gently rounded; dull fuscous, semi-transparent; dorsal hairs blackish; at base yellowish; cilia as in forewings.

Case and Larva.—Unknown.

Mackay (R. E. Turner), Cape York (C. French), Queensland. Two specimens.

14. *P. XANTHOCRHYSA*, n. sp.

♂, 32 mm. Head, thorax, abdomen, and legs bright orange-ochreous, hairs of orbital rims black, antennæ black, pectinations at greatest length 6. Forewings elongate, moderate; costa nearly straight, slightly sinuate before middle, termen gently and obliquely rounded; pale fuscous, semi-transparent; cilia fuscous. Hindwings, with apex rounded, termen rounded, continuous with apex; colour as in forewings; cilia as in forewings.

Case and Larva.—Unknown.

Recognized by the black antennæ.

Perth, Western Australia. One specimen received from Mr. S. Angel; taken in November.

15. *P. BOISDUVALII*, Westw.

Oiketicus Boisduvalii, Westw., P.Z.S. Lond., p. 232, t. 37, fig. 2 (1854); (?) *Lomeria B.*, Walk., Cat. Lep. Het., iv., 967 (1855).

♂, 28 mm. Head, thorax, and abdomen dark ochreous, tinged with fuscous, face fuscous, thorax beneath and hairs of orbital rings blackish. Legs ochreous-fuscous. Antennæ fuscous, pectinations ochreous-fuscous, at greatest length 6. Forewings elongate, moderate; costa very slightly arched, not sinuate, termen oblique, faintly rounded; light fuscous, semi-transparent; cilia light fuscous. Hindwings with apex rounded, termen rounded continuous with apex; colour and cilia as in forewings.

Case and Larva.—According to Mr. W. W. Froggatt (Misc. Pub. Dep. Agric., No. 337) the case of this species is "a slender elongate-oval case, about 2 inches in length, thickly covered with short bits of stick, closely attached to the silk, so that it is quite stiff. The larvæ feed on several species of low shrubs around Sydney."

The perfect insects appear to be scarce. This species is allied to the preceding, but differs by the blackish face and blackish thorax beneath, besides being smaller and narrower-winged.

Blackwood, South Australia. One specimen.

16. *P. ZOPHOPEPLA*, n. sp.

♂, 30 mm. Head, thorax, and antennæ orange-ochreous, posterior half of thorax infuscated. Antennal pectinations at greatest length 8; orange-ochreous, very short on terminal half. Legs ochreous-fuscous. Abdomen ochreous. Forewings elongate, moderate. Costa slightly arched, not sinuate, termen oblique, hardly rounded; dull whitish, semi-transparent on posterior half of wing, basal $\frac{2}{3}$ of wing minutely irrorated with dark fuscous, which coalesce on basal half so as to appear black; cilia dull ochreous. Hindwings with apex rounded, termen rounded continuous with apex; colour and cilia as in forewings.

Case.—Cylindrical, 25 to 35 mm. long; diameter, 10 mm. Dull white, white in some species; wholly or nearly wholly thickly ornamented with leaves of *Eucalyptus*, and with one or two thin, long twigs protruding from 1 to 2 inches beyond posterior extremity of sac. This is the general form, but some are more meagrely ornamented with pieces of grass-stems, varying from 10 to 40 mm. in length, whilst others are ornamented with both leaves and stems, scarcely two (out of 20) being alike. Very similar in appearance to *Melanodes*, but appears to differ by the narrower and longer forewings, and different-shaped hindwings.

Mackay (R. E. Turner) and Townsville (Dodd), Queensland. Several specimens; received in December.

17. *P. HYALOSCOPA*, n.sp.

♂, 30 mm. Head, thorax, antennæ, abdomen, and legs blackish, thorax lighter in middle, antennal pectinations at greatest length 8, black (imperfect). Anal tuft ochreous. Forewings elongate moderate, costa nearly straight, termen unevenly rounded, oblique; hyaline, semi-transparent. basal third and costal edge sprinkled with fine linear blackish scales; cilia fuscous. Hindwings with apex feebly prominent, termen unevenly rounded; colour, markings, and cilia as in forewings, but costal edge with markings broader and better defined; dorsal hairs black.

Case and Larva.—Unknown.

Very distinct by the almost clear wings. North-west Vic-

toria. One specimen; beaten from *Casuarina*, sp.; in November.

18. *P. GRISEA*, Heyl. (*Chalia grisea*, Heyl.).

Ann. Soc. Ent. Belg., xxix., p. cxx. (1886).

♂, 20 mm. Head, thorax, antennæ, legs, and abdomen pale dull ochreous, face darker, a tuft of whitish hair at base of antennæ beneath, antennal pectinations at greatest length 8, much shorter on apical third. Forewings elongate, moderate, costa nearly straight, apex rounded, termen gently bowed, oblique; dull grey-whitish, semi-transparent, along costal edge somewhat ochreous, extreme costal edge fuscous; cilia greyish. Hindwings with termen evenly rounded; colour and cilia as in forewings; dorsal hairs ochreous.

Case and Larva.—Unknown.

An obscure species; the specimen not being in the best of condition, the description may require a slight amendment.

Broken Hill, New South Wales. One specimen; at light; in March.

19. *P. GYMNOPHASA*, Low.

O. gymnophasa, P.L.S. N.S.W., p. 39, 1900.

♂, 20 mm. Head, palpi, antennæ, thorax, legs, and abdomen fuscous, face darker fuscous, thorax darker anteriorly. Antennal pectinations fuscous, at greatest length 8. Forewings elongate, moderate, costa nearly straight, apex rounded, termen gently bowed, oblique; fuscous, slightly darker around margins; cilia fuscous. Hindwings with termen rounded; colour and cilia as in forewings.

Case and Larva.—Unknown.

Allied to the preceding; in fact, the two were formerly described under the one name, but more material having come to hand, the differences are apparent. Apart from the colour the antennæ in the present species is almost even throughout; in *grisea*, however, it is much shorter on apical third.

Broken Hill, New South Wales. One specimen; in October. Also from Melbourne and Ararat, Victoria (Hill).

20. *P. LURIDA*, Heyl.

Chalia lurida, Heyl., Ann. Soc. Ent. Belg., xxix., p. cxx., 1886.

♂, 20 mm. Head, thorax, and abdomen ochreous-grey, face fuscous, base of antennæ pale ochreous-grey, thorax beneath fuscous. Antennæ fuscous, pectinations pale fuscous, at greatest length 8, much shorter on apical $\frac{1}{3}$. Legs pale ochreous-grey. Forewings elongate, moderate, costa nearly straight, apex rounded, termen gently rounded, oblique; pale ochreous-grey, thickly clothed with greyish hairs, except on pos-

terior third, and around termen, which is more thinly scaled and semi-transparent; cilia greyish, becoming fuscous on basal half. Hindwings with apex round, termen rounded continuous with apex; colour and cilia as in forewings, but wings more thinly scaled; dorsal hairs pale greyish-ochreous.

Case and Larva.—Unknown.

Differs from the other species especially by the density of scales and woolly appearance.

Duaringa, Queensland. One specimen. The type came from Cape York, Queensland.

6. PARACHARACTIS, n. g.

Antennæ bipectinated to apex, abdomen moderate. Forewings with one or two dorsal pseudoneuria, 1c very slight, free, 4 and 5 connate or short-stalked, 8 and 9 stalked, 10 sometimes out of 8. Hindwings with 4 and 5 connate, 6 and 7 remote, 8 with a costal pseudoneuria.

Type.—*Cautopsis*, Low.

The species of this genus bear a superficial resemblance to the preceding genus. Structurally, however, they differ in having vein 1c (though slight) free.

1. Thorax greyish-fuscous, antennæ black	21	<i>Leeuwinii</i>
" not " " " " " " "	22	
2. Head and face orange	24	<i>debocephala</i>
" orange, face blackish	21	
3. Forewings blackish-fuscous	22	<i>cautopsis</i>
" ochreous-fuscous	23	<i>crionota</i>

21. P. LEEUWINII, Heyl.

Eumeta Leeuwini, Heyl., Ann. Soc. Ent. Belg., xxix., p. cxlviii., 1886.

♂, 30 mm. Head, thorax, abdomen, and legs grey, face fuscous fillet orange, anterior tibiæ and tarsi blackish, antennæ fuscous, pectinations at greatest length 6. Forewings elongate, moderate, costa nearly straight, termen gently rounded, oblique; greyish-fuscous, darker along margins; cilia grey. Hindwings with apex rounded, termen rounded; colour and cilia as in forewings; dorsal hairs dull ochreous.

Case and Larva.—Unknown.

Broken Hill, New South Wales. One specimen.

22. P. CAUTOPSIS, n. sp.

♂, 28 mm. Head, thorax, and abdomen dull rufous-orange, abdomen more fuscous tinged, face blackish. Antennæ blackish, strongly bipectinated to apex, pectinations at greatest length 6. Legs ochreous, mixed with fuscous. Forewings rather short, costa nearly straight, apex slightly rounded, ter-

men somewhat oblique, very little rounded; uniform blackish-fuscous, darker along termen; cilia blackish. Hindwings with apex rounded, termen rounded, continuous with apex; colour and cilia as in forewings; dorsal hairs blackish.

Case and Larva.—Unknown.

Differs from any other of the described Australian species by its sooty-black colouring.

Newcastle, New South Wales. One specimen; in November.

23. *P. ERIONOTA*, Low.

Oiketicus erionota, Low., T.R.S. S.A., p. 63, 1901.

♂, 30 mm. Head, palpi, and thorax yellow-ochreous, face ochreous, antennæ fuscous, pectinations black, at greatest length 6. Legs and abdomen light fuscous ochreous-tinged. Forewings elongate, moderate, costa nearly straight, slightly sinuate before middle, apex rounded, termen gently bowed oblique; ochreous-fuscous, pale ochreous grey in some specimens; cilia greyish-fuscous. Hindwings with apex slightly prominent, termen rounded, continuous with apex; colour and cilia as in forewings.

Case and Larva.—Unknown.

In the former description of this species the characters were drawn from an abraded specimen. Having recently captured two more we are enabled to re-describe the species more accurately.

Broken Hill, New South Wales. Three specimens; in March and May.

24. *P. DELOCEPHALA*, n. sp.

♂, 32 mm. Head and face orange-yellow. Thorax, abdomen, and legs brownish-ochreous, fuscous-tinged, thorax lighter anteriorly, fillet orange. Antennæ ochreous-fuscous, strongly bipectinated to apex, pectinations black, at greatest length 6. Forewings elongate, moderate, costa nearly straight, apex rounded, termen bowed, oblique; smoky-brown, darker around margins; cilia rather long, smoky-fuscous. Hindwings with apex rounded, termen rounded, continuous with apex; colour and cilia as in forewings.

Case and Larva.—Unknown.

Very distinct by the orange head and face.

Sydney, New South Wales. One specimen.

The following species are wrongly referred to the *Psychidæ*, or unknown to us, viz.:—

Psyche albifrons, Wallenger.

Eumeta Ernesti, Heyl. (prob. = præc.).

Genduara cinerea, Walk.

Panisa circumdata, Walk.

Psychanisa circumdata, Walk.

Entometa ignobilis, Walk. See No. 6.

Cebysa conflictella, Walk., belongs to the *Tineida*.

Oiketicus bicolor. Luc., P.L.S., N.S.W., p. 137, 1893. (*Oeceticus bicolor*, Luc.)

"♂, 26 mm. Head, thorax, and abdomen ferruginous-ochreous. Antennæ black, midrib white, pectinations narrowing at base and apex. Forewings with costa gently rounded, hindmargin rounded; light ochreous-drab or mouse colour, thinly scaled, veins darker; cilia darker or a more fuscous drab. Hindwings as forewings.

"Victoria. An unpretentious-looking insect, the centre ferruginous-ochreous, being the more conspicuous because of the sombre-looking wings." Unknown to us.

Oiketicus felinus, Luc. (*Oeceticus felinus*, Luc.), Proc. Roy. Soc. Queensland, p. 140, 1899.

"♂, 28 mm. Head fuscous, face wool-white. Palpi and antennæ fuscous. Thorax creamy-grey, with anterior band, dorsal and lateral bands rich velvety-fuscous, inclining to black. Abdomen ferrous-red, freely covered with rich, velvety black hairs, caudal segment ferrous-red. Forewings elongate, gently dilate, costa gently rounded, hindmargin obliquely rounded; hyaline, with veins rich velvety fuscous; cilia blackish fuscous. Hindwings and cilia as in forewings. ♀, apterous. Builds its domicile in *Casuarina* needles. A ♀ (bred) was visited by two males, and so taken. May Orchard, Brisbane." Unknown to us.

Oiketicus Macalisteri, Macal., Proc. N. Hist. Soc. Dublin. p. 134 (1867). This is *Talaeoporia magnella*, Walk. (*Tineidæ*).

Eurycyttara (Hamps.), *Macleayi*, Guild; *Oiketicus Macleayi*. Guild, T.E.S., Lond. xv., p. 375, t. 8 (1827); Westw., P.Z.S., p. 222, t. 34, fig. 3 (1854).

The type is unique, and is in the British Museum. We were unable to make a proper examination of the type, but the following are notes on it:—

Expanse, about 17 mm. Wings shaped much as in *Clania tenuis*, Rosen. Head, antennæ, etc., and all wings wholly dark fuscous; thorax slender. Westwood gives the neuriation as follows:—In forewings only 10 terminal branches, the third branch of the sub-costal and the upper discoidal being obsolete,

and the lower discoidal rises conjointly with third branch of median from lower angle of cell, *i.e.*, as we understand 4 and 5 stalked, 6 absent, 9 absent.

Described from type in British Museum.

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